

Application Number 10/767,692
Amendment dated January 5, 2007
Responsive to Office Action mailed October 6, 2006

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REMARKS

This Amendment is responsive to the Office Action dated October 6, 2006. Applicant has amended claims 1, 4, 7, 10, 12, 13, 16, 17, 20, 23, 26, 29, 31, 32, 35, 36, 39, 42, 45, 48, 50, 51, 54 and 55. Applicant has canceled claims 2-3, 21-22, and 40-41. Claims 1, 4-20, 23-39, and 42-57 are pending.

Claim Rejection Under 35 U.S.C. § 102

The Office Action rejected claims 1-57 under 35 U.S.C. § 102(e) as being anticipated by Wakefield (US 6,879,860 to Wakefield et al.). Applicant respectfully traverses the rejection to the extent such rejection may be considered applicable to the amended claims. Wakefield fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. § 102(e), and provides no teaching that would have suggested the desirability of modification to include such features.

For example, Wakefield fails to disclose or suggest selecting a second electrode configuration for the neurostimulator based on the indication of observed efficacy and a genetic algorithm, wherein each of the electrode configurations defines a combination of particular electrodes selected from a set of electrodes for the delivery of neurostimulation energy, the electrode configurations further defining polarities for each of the electrodes in the combination, as recited by Applicant's claim 1 as amended.

Instead, Wakefield teaches that a genetic algorithm can be designed to select the number of frequency bands (or channels), and the number of electrodes.¹ Selecting a number of channels or electrodes is not the same as, or suggestive of, selecting a combination of particular electrodes and polarities for the particular electrodes. Thus, Wakefield fails to disclose or suggest the requirements of amended independent claim 1.

Wakefield is directed towards the use of genetic algorithms in the fitting of a cochlear implant. In describing the operation of a cochlear implant, Wakefield states "periodically, electrodes whose corresponding channels have the highest energy are selected to be stimulated."² Thus, in a cochlear implant, ambient sound is periodically sampled, and a signal from each of the

¹ Wakefield: Abstract; col. 6, ll. 51-57; Fig. 4.

² Wakefield: col. 6, ll. 57-59.

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frequency bands selected as having the highest energy at that time is transmitted to the appropriate corresponding electrode that will stimulate a particular corresponding set of cochlear nerve fibers.³ Cochlear nerve fibers are interpreted by the brain to correspond to different frequencies of sound based on their location along the length of the cochlea.⁴

The genetic algorithm in Wakefield optimizes the number of frequency bands and electrodes used in a particular fitting of a cochlear implant system. However, Wakefield does not suggest using the genetic algorithm to arrive at an optimal solution of a particular combination of electrodes with particular polarities for the patient. In fact, Wakefield teaches away from any modification to optimize to an electrode configuration, because limitation to a particular combination of electrodes would prevent the implant from reproducing any frequency in ambient sound other than those associated with the particular electrodes of the combination.

Applicant respectfully submits that Wakefield does not teach or suggest a method for selecting electrode configurations wherein each of the electrode configurations defines a combination of particular electrodes selected from a set of electrodes for delivery of neurostimulation energy, the electrode configurations further defining polarities for each of the electrodes in the combination. Accordingly, Applicant believes claim 1 to be in condition for allowance.

In addition, claims 20 and 39 have been amended to include the feature of "wherein each of the electrode configurations defines a combination of two or more electrodes selected from a set of electrodes for the delivery of neurostimulation energy, the electrode configurations further defining polarities for each of the electrodes in the combination". Accordingly applicant believes that claims 20 and 39 as amended are in condition for allowance for at least the same reasons as claim 1.

Claims 4-19, 23-38, and 42-57 depend either directly or indirectly from independent claims 1, 20, and 39 respectively, accordingly applicant believes that these claims are in condition for allowance for at least the same reasons as independent claims 1, 20, and 39 as well as for addition reasons, some of which are listed below.

³ Wakefield: col. 6, ll. 51-59.

⁴ E.g., <http://www.science.org.au/nova/029/029box01.htm>.

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Wakefield also fails to teach or suggest "wherein the electrodes are carried by two or more implanted leads," as recited by claim 4. Similarly, the Wakefield lacks any teaching that would have suggested "wherein the leads are implanted proximate a spine of a patient," as recited in claim 6. Moreover, Wakefield fails to provide any teaching of "a spinal cord stimulator" as recited in claim 11. In fact, Wakefield fails to provide any teaching or suggestion related to spinal cord stimulation. Consequently, the Applicant is entirely confused by the Examiner's argument relating to these claims.

Wakefield fails to disclose each and every limitation set forth in claims 1, 4-20, 23-39, and 42-57. For at least this reasons, the Office Action has failed to establish a prima facie case for anticipation of these claims under 35 U.S.C. § 102(e). Withdrawal of this rejection is requested.

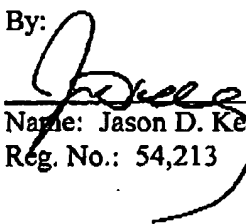
CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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1-5-07
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